

# ANSWER KEY

SECOND YEAR HIGHER SECONDARY EXAMINATION SAY - 2022

PART-I/II/III


SUBJECT: ELECTRONICS

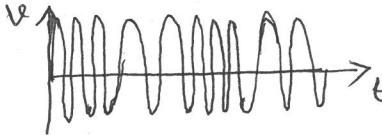
CODE NO: SY 531 SAY T31

VERSION: Q

60 SCORES

2 HOURS

Qn. No	Sub Qns	Answer Key/Value Points	Score	Total Score
1		-9V	1	
2		clamper	1	
3		2	1	
4		1	1	
5		Ionosphere	1	
6		2000/sec	1	
7		Core	1	
8		25	1	
9		Cache Memory	1	
10		Zener voltage regulator	1	
11		FM	1	
12		graded index fiber.	1	
13		LAN	1	
14			2	

Qn. No	Sub Qns	Answer Key/Value Points	Score	Total Score															
15		<table border="1"> <thead> <tr> <th>S</th> <th>R</th> <th>Q<sub>n+1</sub></th> </tr> </thead> <tbody> <tr> <td>0</td> <td>0</td> <td>Q<sub>n</sub></td> </tr> <tr> <td>0</td> <td>1</td> <td>0</td> </tr> <tr> <td>1</td> <td>0</td> <td>1</td> </tr> <tr> <td>1</td> <td>1</td> <td>-</td> </tr> </tbody> </table>	S	R	Q <sub>n+1</sub>	0	0	Q <sub>n</sub>	0	1	0	1	0	1	1	1	-	2	
S	R	Q <sub>n+1</sub>																	
0	0	Q <sub>n</sub>																	
0	1	0																	
1	0	1																	
1	1	-																	
16			2																
17		LED, LASER diode.	2																
18		explanation of VSB	2																
19		two examples for i/p and two for o/p	2																
20		Explanation	2																
21		Block diagram	3																
22		Spectrum of AM signal	3																
23		Any three comparison	3																
24		Comparison - 3 points	3																
25		circuit	3																
26		1 score for drawing each topology	3																
27		Concept of frequency-re-use	3																

Qn. No	Sub Qns	Answer Key/Value Points	Score	Total Score
28	a	1 score for freq. response of each	3	4
	b	High pass filter with cutoff = 3KHz	1	
29		circuit	2	4
		explanation of working	2	
30	a	explanation of T flip flop	2	4
	b	truth table	2	
31		explanation	3	4
		equation ( $f_{cr} = 9\sqrt{N_{max}}$ )	1	
32		circuit of regulator	<del>2</del>	4
		At break down, zener diode maintains a constant voltage even when current through it varies.	2	
33		Write the 4 differences	4	
34		$P_c = 100W, m = 0.2$ $P_T = P_c \left(1 + \frac{m^2}{2}\right) = 100 \left(1 + \frac{(0.2)^2}{2}\right)$ $= \underline{102W}$ power in one sideband $P_{LSB} = P_{USB} = \frac{m^2}{4} P_c = \underline{1W}$	3	6
			3	

Qn. No	Sub Qns	Answer Key/Value Points	Score	Total Score
35	a b c	structure explanation of TIR The ray travels through the core after getting reflected from the cladding. This reflection is total internal reflection. So the path of the ray is zigzag.	2 2 2	6
36	a b c	difference between normal scanning and interlaced explanation of how it avoids flickering 7 MHz	3 2 1	6